

CLAIMS

I claim:

1 1. A method of requesting genomics services from a service provider and providing
2 genomics services to a client comprising:

3 under control of said client,

4 providing one or more biological samples;

5 identifying one or more genome sequences;

6 under control of said service provider,

7 obtaining said samples and said genome sequences;

8 providing one or more microarrays wherein each of said microarrays contains at

9 least one of said genome sequences;

10 applying at least one of said biological samples to at least one of said

11 microarrays; and,

12 under control of said client,

13 receiving data representative of said applying step over the Internet.

1 2. The method of Claim 1 wherein said genome sequence comprises a single nucleotide
2 polymorphism.

1 3. The method of Claim 1 wherein said step of providing one or more biological samples
2 comprises:

3 under control of said service provider;

- 1 providing a repository of biological samples;
- 2 providing a catalog of said repository;
- 3 under control of said client;
- 4 accessing said catalog; and,
- 5 selecting said biological samples from said catalog.

1 4. The method of Claim 3, wherein said steps of providing a catalog and accessing said
2 catalog occur over an Internet connection between said client and said service provider.

1 5. The method of Claim 4 wherein said Internet connection is a secure Internet connection.

1 6. The method of Claim 1 wherein said one or more biological samples comprises tissue
2 samples.

1 7. The method of Claim 1 wherein said one or more biological samples comprises DNA
2 samples.

1 8. The method of Claim 1 further comprising the step of analyzing said data representative
2 of said applying step.

1 9. The method of Claim 8 wherein said analyzing step occurs under control of said client.

1 10. The method of Claim 8 wherein said analyzing step occurs under control of said service
2 provider.

1 11. The method of Claim 1 wherein said data representative of said applying step comprises
2 genotype data.

1 12. The method of Claim 1 wherein said step of providing one or more biological samples
2 comprises transporting said samples from said client to said service provider.

1 13. The method of Claim 12 wherein said data representative of said applying step comprises
2 gene expression data.

1 14. The method of Claim 12 wherein said one or more biological samples comprises total
2 RNA samples.

1 15. The method of Claim 12 wherein said one or more biological samples comprises poly-A
2 RNA samples.

1 16. A method of requesting proteomics services from a service provider and subsequently
2 providing proteomics services to a client comprising:
3 under control of said client,
4 providing one or more biological samples;

- 5 identifying one or more antigens;
- 6 under control of said service provider,
- 7 obtaining said samples and identified antigens;
- 8 providing one or more microarrays wherein each of said microarrays contains
- 9 probes to detect at least one of said identified antigens;
- 10 applying at least one of said biological samples to said microarrays; and,
- 11 under control of said client,
- 12 receiving data representative of said applying step over the Internet.

1 17. The method of Claim 16 wherein said step of providing one or more biological samples
2 comprises:

- 3 under control of said service provider;
- 4 providing a biological sample repository;
- 5 providing a catalog of said biological repository;
- 6 under control of said client;
- 7 accessing said catalog; and,
- 8 selecting said biological samples from said catalog;

1 18. The method of Claim 17, wherein said steps of providing a catalog and accessing said
2 catalog occur over an Internet connection between said client and said service provider.

19. The method of Claim 18 wherein said Internet connection is a secure Internet connection.

- 1 20. The method of Claim 1 or Claim 16 further comprising applying a unique identifier to
- 2 each of said one or more biological samples.

- 1 21. The method of Claim 20 wherein said applying step is performed under control of said
- 2 client.

- 1 22. The method of Claim 20 wherein said applying step is performed under control of said
- 2 service provider.

- 1 23. The method of Claim 20 further comprising tracking said one or more biological samples
- 2 using said unique identifier.

- 1 24. The method of Claim 23 wherein said tracking step is performed under control of said
- 2 client.

- 1 25. The method of Claim 23 wherein said tracking step is performed under control of said
- 2 service provider.

- 1 26. A process for remotely selecting samples from a biological repository comprising:
- 2 under control of a service provider;
- 3 providing a database of said samples in said biological repository;

- 4 providing a network connection to said database accessible by a client;
- 5 under control of a client;
- 6 accessing said database over said network; and,
- 7 selecting a subset of said samples from said biological repository.

1 27. The process of Claim 26 wherein said network is the Internet.

1 28. The process of Claim 26 wherein said database includes clinical records corresponding
2 to at least a portion of said samples.

1 29. The process of Claim 26 wherein said database includes phenotype information
2 corresponding to at least a portion of said samples.

1 30. The process of Claim 26 wherein said database includes follow-on medical history
2 information corresponding to at least a portion of said samples.

1 31. A process for remotely conducting a genomics experiment comprising:

2 under control of a service provider;

3 providing a database of biological samples in a biological repository;

4 providing a network connection to said database accessible by a client;

5 under control of a client;

6 accessing said database over said network;

7 selecting a subset of said samples from said biological repository;
8 identifying a set of genomic sequences;
9 under control of said service provider;
10 determining if said genomic sequences are present in said samples; and,
11 informing said client of results of said determining step.

1 32. The process of Claim 31 further comprising under control of said service provider:
2 modifying said set of genomic sequences subsequent to said informing step.

1 33. The process of Claim 31 further comprising identifying said samples with unique
2 identifiers.

1 34. The process of Claim 33 further comprising
2 under control of said client:
3 selecting a sample from said subset of samples;
4 determining a unique identifier corresponding to said selected sample;
5 requesting status information regarding said identifier;
6 under control of said service provider:
7 determining status of said identifier; and,
8 informing said client of said status.

1 35. A method of providing genomics services to a client comprising:

2 receiving one or more biological samples from said client;
3 receiving one or more genome sequences from said client;
4 providing one or more microarrays wherein each of said microarrays contains at least one
5 of said genome sequences;
6 applying at least one of said biological samples to at least one of said microarrays; and,
7 transmitting data representative of said applying step to said client over the Internet.

1 36. A method of providing genomics services to a client comprising:
2 receiving one or more biological samples from said client over the Internet;
3 receiving one or more genome sequences from said client;
4 providing one or more microarrays wherein each of said microarrays contains at least one
5 of said genome sequences;
6 applying at least one of said biological samples to at least one of said microarrays; and,
7 transmitting data representative of said applying step to said client.

1 37. A method of providing genomics services to a client comprising:
2 receiving one or more biological samples from said client;
3 receiving one or more genome sequences from said client over the Internet;
4 providing one or more microarrays wherein each of said microarrays contains at least one
5 of said genome sequences;
6 applying at least one of said biological samples to at least one of said microarrays; and,
7 transmitting data representative of said applying step to said client.

- 1 38. A method for providing experimental biological services to a client comprising:
 - 2 receiving a work order from said client comprising a biological sample portion listing
 - 3 one or more biological samples and an assay portion listing one or more
 - 4 experiments based on said biological samples;
 - 5 performing said one or more experiments on said one or more biological samples; and,
 - 6 transmitting data representative of said performing step to said client.
- 1 39. The method of Claim 38 wherein said biological sample portion of said work order
- 2 comprises one or more biological samples submitted by said client.
- 1 40. The method of Claim 38 wherein said biological sample portion of said work order
- 2 comprises one or more pointers to records in a biological sample database.
- 1 41. The method of Claim 38 wherein said assay portion of said work order comprises an
- 2 experimental protocol and a specification of one or more probes.
- 1 42. The method of Claim 41 wherein said performing step further comprises:
 - 2 providing one or more microarrays onto which said one or more probes is deposited; and,
 - 3 interrogating said one or more biological samples with said one or more microarrays.
- 1 43. The method of Claim 42 wherein said one or more probes are immobilized to a substrate.

1 44. The method of Claim 43 wherein said one or more probes are immobilized on a flat
2 surface.

1 45. The method of Claim 43 wherein said one or more probes are immobilized in a three-
2 dimensional polymer.

1 46. The method of Claim 43 wherein said one or more probes are immobilized on bead
2 surfaces.

1 47. The method of Claim 42 wherein said one or more probes are in solution.

1 48. The method of Claim 38 wherein said receiving step further comprises receiving said
2 biological sample portion of said work order from a remote location.

1 49. The method of Claim 38 wherein said receiving step further comprises receiving said
2 assay portion of said work order from a remote location.

1 50. The method of Claim 38 wherein said transmitting step further comprises transmitting
2 said data to a remote location.

1 51. The method of Claim 38 wherein said receiving step further comprises receiving said
2 biological sample portion of said work order over the Internet.

1 52. The method of Claim 38 wherein said receiving step further comprises receiving said
2 assay portion of said work order over the Internet.

1 53. The method of Claim 38 wherein said transmitting step further comprises transmitting
2 said data over the Internet.

1 54. The method of Claim 38 wherein said one or more biological samples comprises tissue
2 samples.

1 55. The method of Claim 38 wherein said one or more biological samples comprises DNA
2 samples.

1 56. The method of Claim 38 wherein said one or more biological samples comprises total
2 RNA samples.

1 57. The method of Claim 38 wherein said one or more biological samples comprises poly-A
2 RNA samples.

1 58. The method of Claim 38 wherein said assay portion of said work order comprises a list
2 of genes.

1 59. The method of Claim 38 wherein said assay portion of said work order comprises a list
2 of single nucleotide polymorphisms.

1 60. The method of Claim 38 wherein said assay portion of said work order comprises a list
2 of proteins.